

Attorney Docket No.: BDA-0038  
Inventors: Roger S. Cubicciotti  
Serial No.: 09/171,885  
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Please add the following new claims:

*Sub C1* 14. A prodrug complex comprising a drug bound to a synthetic receptor identified by a method selected from the group consisting of combinatorial selection, monoclonal antibody selection and antibody engineering, wherein said drug preferentially dissociates from the synthetic receptor and binds to a pathophysiologic receptor following administration of the prodrug complex to an organism.

*B1* 15. The prodrug complex of claim 14 wherein a biologic or biocompatible structure is attached to the prodrug complex.

*Sub C2* 16. A method of producing a prodrug complex comprising:

(a) selecting a drug to be delivered as a prodrug complex;

(b) selecting a synthetic receptor that binds to the drug, wherein said synthetic receptor is selected from a sequence, shape, <sup>*derived from*</sup> antibody or encoded chemical library; and

*der* (c) binding the selected drug to the selected synthetic receptor to form a prodrug complex.

17. The method of claim 16 further comprising attaching a biologic or biocompatible structure to the prodrug complex.

*1 complex* *Sub C2* 18. A multi-prodrug complex comprising at least two drugs bound to at least two synthetic receptors, wherein at least one of

*2 prodrug complexes?*

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*Sub C3 cont.* the synthetic receptors is identified by a method selected from the group consisting of combinatorial selection, monoclonal antibody selection and antibody engineering, and wherein said drugs preferentially dissociate from the synthetic receptors and bind to pathophysiologic receptors following administration of the multi-prodrug complex to an organism.

*B1 cont.* 19. The multi-prodrug complex of claim 18 wherein a biologic or biocompatible structure is attached to the multi-prodrug complex.

*Sub C4* 20. A method of producing a multi-prodrug complex comprising:  
(a) selecting at least two drugs to be delivered as a multi-prodrug complex;

(b) selecting at least two synthetic receptors that bind to the selected drugs, wherein at least one of the synthetic receptors is selected from a sequence, shape, antibody or encoded chemical library; and

(c) binding the selected drugs to the selected synthetic receptors to form a multi-prodrug complex.

21. The method of claim 20 further comprising attaching a biologic or biocompatible structure to the multi-prodrug complex.

*Sub C5* 22. A prodrug complex comprising:

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*Sub  
25  
cont.*

(a) a synthetic receptor selected from the group consisting of drug receptors, transmitter receptors, autocoid receptors, cytokine receptors, antibodies, antibody fragments, molecular recognition units, engineered antibodies, antibody mimics, adhesion molecules, agglutinins, integrins, selectins, nucleic acids and biopolymers comprising nucleotides, saccharides, fatty acids, phenols, phosphates, sulfates, other organic monomers or nonbiologic monomers; and

*By  
cont.*

(b) a selected drug that binds to the synthetic receptor with lower affinity than to the drug's pathophysiologic receptor so that the selected drug dissociates from the synthetic receptor and preferentially binds to the pathophysiologic receptor.

23. The prodrug complex of claim 22 wherein a biologic or biocompatible structure is attached to the prodrug complex.

*Sub  
26*

24. A method of enhancing delivery of a selected drug to a pathophysiologic receptor for said selected drug comprising:

(a) selecting a drug to be delivered as a prodrug complex and a synthetic receptor selected from the group consisting of drug receptors, transmitter receptors, autocoid receptors, cytokine receptors, antibodies, antibody fragments, molecular recognition units, engineered antibodies, antibody mimics, adhesion molecules, agglutinins, integrins, selectins, nucleic acids and biopolymers

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*Sub C6 cont.*  
comprising nucleotides, saccharides, fatty acids, phenols, phosphates, sulfates, other organic monomers or nonbiologic monomers, wherein said selected drug binds to the selected synthetic receptor with lower affinity than to the drug's pathophysiologic receptor;

*B1 cont.*  
(b) binding the selected drug to the selected synthetic receptor to produce a prodrug complex; and

(c) administering the prodrug complex to an organism so that the selected drug dissociates from the selected synthetic receptor and binds to the drug's pathophysiologic receptor.

25. The method of claim 24 wherein the prodrug complex is attached to a biologic or biocompatible structure.

*Sub C7*  
26. A multi-prodrug complex comprising:

(a) at least two synthetic receptors, at least one of which is selected from the group consisting of drug receptors, transmitter receptors, autocoid receptors, cytokine receptors, antibodies, antibody fragments, molecular recognition units, engineered antibodies, antibody mimics, adhesion molecules, agglutinins, integrins, selectins, nucleic acids and biopolymers comprising nucleotides, saccharides, fatty acids, phenols, phosphates, sulfates, other organic monomers or nonbiologic monomers; and

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*Sub C7 cont.*  
(b) at least two selected drugs that bind to the synthetic receptors with lower affinity than to the drugs' pathophysiologic receptors so that the selected drugs dissociate from the synthetic receptors and preferentially bind to their pathophysiologic receptors.

*B1 cont.*  
27. The multi-prodrug complex of claim 26 wherein a biologic or biocompatible structure ~~is~~ attached to the multi-prodrug complex.

*Sub C8*  
28. A method of enhancing delivery of selected drugs to pathophysiologic receptors for said selected drugs comprising:

(a) selecting at least two drugs to be delivered as a multi-prodrug complex and at least two synthetic receptors, at least one of which is selected from the group consisting of drug receptors, transmitter receptors, autocoid receptors, cytokine receptors, antibodies, antibody fragments, molecular recognition units, engineered antibodies, antibody mimics, adhesion molecules, agglutinins, integrins, selectins, nucleic acids and biopolymers comprising nucleotides, saccharides, fatty acids, phenols, phosphates, sulfates, other organic monomers or nonbiologic monomers, wherein said selected drugs bind to the selected synthetic receptors with lower affinity than to the drugs' pathophysiologic receptors;